

**ε -NEIGHBORHOODS OF ORBITS AND
CLASSIFICATIONS OF PARABOLIC
DIFFEOMORPHISMS**

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In this talk, we study parabolic diffeomorphisms $f : \mathbb{C} \rightarrow \mathbb{C}$. The question motivating this research is:

Can we recognize a parabolic diffeomorphism by looking at one of its orbits?

More precisely, we want to do it by studying the (directed) area of the ε -neighborhoods of its orbits.

We give a positive answer when the formal class of a diffeomorphism is concerned. As for the analytic class, the question is more subtle. We present results concerning the analyticity of the area of the ε -neighborhoods of orbits.